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THE ORIGIN AND MAINTENANCE OF DIVERSITY IN MAN

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PURPOSE OF THIS PAPER

Last year the writer, in a paper¹ read before the Royal Geographical Society of London, attempted to prove that racial characters in man have been, for a very prolonged period, of progressively diminishing importance. The same paper sought to outline some of the environmental conditions which favor the development of a stable nationality.

I have since been following out a similar train of thought in a book which strives to show that, essentially, the world war is the result of an attempt to impose upon man the uniformity of advanced industrialism, this involving, in the long run, the suppression of nationality, as of all other forms of human diversity and individuality. That attempt, when made with the help of one of the most powerful military organizations known in history, aroused all but world-wide instinctive opposition—an opposition which, previously, while efforts in this direction were being made chiefly by more or less isolated groups, had been felt and expressed only by individuals.

To me it seems that the instinctive revolt just mentioned may be said to have its deeper sources in that tendency to variation which appears to be inherent in all living things. From the outbreak of the war public men everywhere have tried to find a suitable formula to express their individual repulsion to the forcible standardization of the world, an attempt which has not, as yet, met with a full measure of success. But if the origin of that repulsion is what has just been suggested, it ought to be the special task of the geographer to find for it an adequate expression.

For note that, by definition, the geographer is concerned with the interaction between man and his environment, both physical and organic. Now it is a simple fact of observation that the physical environment is markedly diverse on different parts of the earth's surface. Most of those who have thought about the problem in any detail are agreed that the almost infinite diversity of organic life is, in essence, a reflection of the diversity of the physical conditions. Among biologists, also, there is a large measure of agreement as to the mechanism by which the organism is able to make an adaptive response to a diverse and changing environment. Most biologists are agreed further that the existing variety of plants and animals is not only an adaptive response to the diversity of surface relief, climate, and other factors which exists on the earth, but that since we know that these

¹ M. I. Newbigin: *Race and Nationality*, *Geogr. Journ.*, Vol. 50, 1917, pp. 313-335 (discussion, pp. 328-335).

conditions are changing, continuously if slowly, the persistence of stocks depends upon the retention of this power of adaptation. In other words, they hold that, if organisms generally are to survive, they must not only be diverse, but the mechanism by which that diversity is produced and maintained must continue to act.

Now the concept which is implicit in the attempt to complete the industrialization of the world involves, in the case of man, both an attempt to deny that human environment is under modern conditions diverse and an effort to interfere with the mechanism by which human adaptive diversity originates and is preserved.

Surely, then, here is a direct challenge to the geographer, and that from two sides. It is for him an axiom that the world is not uniform but diverse, and the complex interrelations between the diverse environments and the different types of human societies are his special field of study.

Hitherto, influenced no doubt by the enormous stimulus to his science which came from the development of biological theory during the latter part of the nineteenth century, he has shown too great a tendency to accept from the biologists the view that the mechanism which produces and maintains diversity acts in the case of man in an almost similar fashion to that in which it acts in the case of other organisms. That position should, to my mind, be abandoned as untenable, and he should respond to the challenge of industrialism by a setting forth of his own ideals, securely founded upon the fundamental deductions of his science.

The subject thus outlined is too vast to be dealt with within the compass of a short paper. All that it is proposed to do here is to suggest to geographers some paths along which fruitful investigation seems possible, and to set forth some of the conclusions to which the lines of reflection followed in the works mentioned have led me.

In detail, what I propose to do here is to attempt to show, from a standpoint somewhat different from the one previously adopted, that the direct and slow process of adaptation to diverse environments which occurs among animals today, as it must have occurred in a precisely similar fashion among primitive men—the process which produced geographical races among men—is now of little significance in human life.

Secondly, I wish to suggest that the place of this process, in producing and maintaining human diversity, has been taken by another, more direct and far more rapidly produced form of adaptation. The effects of this process, it will be suggested, are to give rise to a form of diversity for which we have as yet no name save the somewhat vague one of nationality; for the “nations,” in so far as they are true entities, and the regional groupings which bear to them something of the relation which species show to genera among organisms generally, seem to me to be the human adaptive response to environment. It is this response, it is believed, which produces evolution in civilized man, or, in other words, leads to increased fitness to survive.

Finally, an attempt will be made to show that the ideal of industrialism, or what some German socialists call internationalism, would mean—were it to be successful—the loss not only of all that is distinctively human but even of the power of adaptation itself. Were man to become a parasite of the machines which his hands have created, he would not only acquire the characters of the parasite, but, necessarily, he would at the same time show that loss of the capacity for variation which stamps the parasite so deeply and is to the biologist the proof that for it racial extinction is approaching.

THE GEOGRAPHICAL SIGNIFICANCE OF THE SUBJECT

To this summary statement two brief explanatory notes may be added, which may serve to indicate the geographical importance of the subject discussed. By nationality I do not mean state. The ideal state, to my mind, would be a collection of regional groupings, connected together by a community of interest greater than that which drew any one of them towards any outside state, occupying an area with a common attractive center, that area being separated from surrounding states by boundary zones relatively unsuited to human life and not occupied by any large, coherent groups of people. Such a state would further be strong enough, both morally and materially, to permit each regional grouping within its boundaries to express its individualized corporate life; would realize, that is to say, that its strength came rather from harmonious diversity than from an imposed uniformity. This means, in its turn, that the desire to preserve the “principle of nationality” as the supremely important factor in human life is not to be regarded as meaning that each localized grouping, even if well defined, must necessarily form a “nation” in the juristic sense.

Again, lest it be said that the subject of this paper, as defined above, is abstract, philosophical, or even biological rather than geographical, let me give a specific example of its general bearing on human relations.

Alsace and, perhaps to a somewhat less extent, annexed Lorraine are regions with a strong localized life, deeply enshrined in the hearts of their people. All geographers at least should admit that that localized life, embodied in tradition but based ultimately upon place conditions, is part of the world's heritage, not to be lightly tampered with. Now France, partly from geographical causes, especially the variety of her surface and climate, and partly from historical causes—for she has been less industrialized than Germany—has always, and notably since the Revolution, shown something of the divine willingness to permit diversities based upon regional groupings to exist undisturbed. We say divine, for God, according to the truth expressed in the old Hebrew legend, created diversity; it is only man, especially industrialized man, who seeks to produce uniformity.

Germany, on the other hand, partly from geographical causes—for she is largely an artificial state, without France's well-marked natural boundaries—and partly also from historical causes, has hitherto shown far less

willingness to permit regional life to exert its full influence. Her fifty years' rule of Alsace-Lorraine has been directed towards crushing out local life, that is to say to robbing the world of something which can never be replaced.

Now, if the thesis which it is sought to maintain here is well founded, any extension of this type of rule, without essential modification of its aim—nay, more, even a continuance in unmodified form of the present rule in Alsace-Lorraine, as in Poland, must mean an attempt to stop the process of evolution in the form in which it occurs among modern men. Against such an attempt there must always be struggle—unless the creative force has spent itself, as some pessimists would have us believe, and civilized man as we know him is destined to pass away from the earth. Surely, therefore, the problem is one which the geographer has to face, one in regard to which he must, if he is to justify his existence, strive to think clearly.

THE ORIGIN OF VARIATION IN ANIMALS

The attempt to prove that the causes which have produced organic evolution among animals differ in kind from those acting in the case of modern man, which constitutes the first stage in our argument, necessarily involves some discussion of the former problem. For our purpose the treatment need only be brief.

Most biologists, with or without qualification, would probably accept the following presentation, necessarily somewhat crudely put on account of limitations of space.

We can look back, with a considerable degree of assurance, to a period when the earth was covered by the primordial ocean. Within that ocean, somewhere and somehow, living matter arose. The first organisms, in all probability, showed a considerable degree of uniformity. This conclusion is based, first, upon the evidence of the rocks, for life becomes more complex as we examine the strata of the successive periods, and, secondly, is a deduction from the presumed fact that the environmental conditions were originally more or less uniform.

As dry land arose, as surface relief became more and more complex, and as all the phenomena associated with a complex relief developed, there was a parallel development of diversity among organisms. This diversity is supposed to have originated in something like the following fashion. The originally uniform environment underwent change, differing here from its condition there. The organisms at the same time displayed the power of varying. In any particular set of conditions some varieties were better fitted to survive than others; in the course of the struggle for existence such varieties maintained their hold while others died out. A continuation of the process led to an increasing diversity of organic life and therefore to a more intense struggle and thus again to further evolution. That evolution in its turn meant an adaptation to particular environmental conditions so

close that related forms were prevented from encroaching on one another's terrain. This may occur in one or both of two ways. There may be an actual geographical barrier, such as the tundra zone which separates the area inhabited by the brown bears of the northern forest zone from the Arctic fringe haunted by the polar bear. Again, as happens in this case also, the adaptations of each form to a particular terrain may be so close that it is virtually impossible for it to exist within the area in which the related species finds a home. Thus the brown bear is structurally and physiologically unfitted to obtain or eat the food substances upon which the polar bear depends, and it could not find its own kind of food within the polar bear belt.

Some form of isolation of this kind seems always to appear in the case of evolving species, and, when it lasts for a prolonged period, it is followed or accompanied by a physiological difference so great that even when the two kinds of organisms do meet on some neutral ground, interbreeding between them is impossible.

Thus we may recognize four great factors which tend to produce permanent differences between organisms generally, leading ultimately to the origin of new species. There is (1) the essential condition of a diverse environment; (2) an apparently slow acquisition of fitness to particular environments, the effects of life in each set of surroundings being supposed to act through a long period of time; (3) the presence of some form of barrier, either an actual geographical feature of the earth's surface, such as a desert, cold or hot, a mountain chain, a belt of seawater, etc., or the physiological barrier of a marked contrast between modes of life. Both, as we have shown, may be present simultaneously. Finally, as a secondary phenomenon, due according to some to previous isolation, (4) physiological sterility occurs, and, when this takes place, varieties have become species.

THE ORIGIN OF DIVERSITY IN MAN

We have next to consider the question how far these factors can be said to affect the process of evolution in man, and in this case it is convenient to reverse the order given above.

In the first place it is clear that there is no such thing as interracial sterility in the case of man, for all breeds seem to be perfectly fertile when crossed. It may be said that this simply means that there is only a single human species. But I think it implies something more than this. All anthropologists are agreed that, in earlier days, the genus *Homo* was represented by more than one species. Since these primitive forms are only known by their bones we cannot be certain that the morphological differences were accompanied by the development of sterility, cannot learn whether the differentiation stopped before this point was reached. Similarly, it is a disputed point whether *Homo sapiens* is the direct but modified descendant of one of the primitive forms or whether he is of mixed ancestry;

in other words, it is doubtful whether a blending did or did not occur between races not yet differentiated into species and whether modern man may have risen from such a blending.

In either case it is clear that, whereas a tendency to the formation of species once occurred in the case of man, this tendency, at some period of his history, was definitely checked and has shown no indication of arising anew. This forms part of the evidence for the view that the environment acts on man in a different way from that in which it acts with other organisms. One of the causes of the cessation of species formation in man seems to be that, owing both to his intelligence and to his nimbleness, no barrier, such as those which serve to separate animals, can act permanently in his case. This seems to me to be true both as regards actual physical obstacles and as regards that furnished by an adaptation to different modes of life.

The first point may be dismissed briefly. It is a commonplace that, especially as some degree of specialization is attained, no geographical feature can permanently separate races of man. No mountain chain is so lofty, no desert—cold or hot—so barren, that by human ingenuity and skill it can not be crossed. No ocean is so wide, no marsh or forest belt so impenetrable that it will not finally yield a passage.

The second point merits a somewhat fuller discussion than can be given here; a few indications must suffice for our purpose. In a sense it may be said that many human societies, especially primitive ones, show as delicate and as complex an adaptation to particular surroundings as ever does animal in form and function. But in the first place the fact that the adaptation is social and not individual is important; in the second, owing to his great adaptability, itself largely dependent upon his *relatively* low grade of structural specialization (as shown for example in the nature of his teeth, and even in the form of his limbs) and dependent also upon his high grade of intelligence, man can form new habits, adopt new modes of life, with surprising rapidity.

Thus, out of the four factors which influence evolution in animals, we have left only the first two as possibly acting in the case of man. Both demand a little care and consideration.

THE EFFECT OF THE ENVIRONMENT ON MAN

Let us take first the question of environmental diversity. It may be said that it is a foregone conclusion that if the physical and organic environment is diverse for animals, so must it also be diverse for man. But it is just this apparent commonplace that has been questioned by those who uphold what we have called the ideal of advanced industrialism.

The concept implicit in the ideal of internationalism, itself a product of advanced industrialization, involves the assumption that men everywhere are becoming similar. Now if the environment is really diverse, and if

there remains in man any capacity for adaptive response to varying environmental conditions, that ideal is impossible of realization. To the Germans, accustomed to work out in detail the basis of their beliefs, this fact is perfectly obvious. We find, then, in various German authors a deliberate attempt made to prove that, in the industrialized world, the part of the environment important to man is not diverse but is steadily becoming more and more uniform.

This position is worked out with some fulness in a book by Dr. Renner²—a book which should be translated into English. In it the author sets forth with clearness, though often with much disingenuousness, the effects of advanced industrialization on human life. For him this involves the suppression of nationality as a concept which has outlived its usefulness. In order to justify this forcible suppression he attempts to prove that as a result of international means of communication and of international trade, man no longer, as it were, lives on a particular part of the earth's surface and has no longer important direct relations to the physical conditions prevailing around his dwelling place. In his view man has become detached from all the old relations and is only a citizen of a state which supplies all his needs and intervenes between him and direct contact with mother earth.

Renner points out, what is in part an obvious fact, that the house in which industrialized man lives, the clothes he wears, the food he eats, etc., are no longer deeply stamped with the mark of local place relations, but are becoming more or less uniform throughout the industrialized belt of the world. To him the state is justified in completing by force a process which seems to him inevitable in any case. Now, if this be true, it must mean, as it seems to me, that the production of variation in man is to cease, while, by its very statement, it means that existing variations and adaptations are to be, so far as possible, wiped out.

It means that the production of variations in man must cease, because, unless the biologists are wholly wrong, variation arises only in response to environmental diversity. If the environment is to be rendered artificially uniform, we must in the long run all become uniform also and meantime can only, as it were, live upon our accumulated capital of variations—those inherited from an earlier period when the environment was admittedly diverse.

Dr. Renner puts the matter with equal boldness and clearness, and the deduction which he has the courage to make is that against which, as already stated, the greater part of the world has revolted instinctively. But if he puts the matter with distressing plainness and carries his argument to its logical conclusion, some parts of the same chain of reasoning have struck many different types of mind. There is a sense in which it is true that industrialization has brought a new uniformity, as it has certainly brought a new ugliness, into our lives. A perception of the fact has, I think, had

² Karl Renner: *Marxismus, Krieg und Internationale*.

much to do with that emphasis on race which, from many different sides, has made itself heard in recent years.

What many of those who lay excessive stress upon the differences, both the physical and the far less definitely known intellectual and moral differences between races and subraces of men, really desires to do seems to me to throw up in high relief existing differences, real or supposed, in a pathetic attempt to preserve the menaced variety of men. The tree, they seem to say, will throw out no new shoots; no fresh crown of leaves and blossoms will come to adorn it: therefore let us do all we can to preserve the products of past free growth; let us even put branches under glass cases and keep them as decorations to gladden us during the winter of our discontent.

As against this counsel of pessimism, I would assert boldly that the fount from which variations once arose has not dried up. It is as productive as of old: it is only the form which has changed—the capacity for growth has not been lost.

To me it seems that, as contrasted with the *slow, indirect* mode of producing and establishing visible variations in animals, which involves a keen struggle for existence and the passage of many generations, human societies have a *speedy, direct* capacity for adapting themselves to place conditions, a capacity which can display itself within one or a few generations. Further, while this power of change is, or may be, extremely rapid when no outside interference is attempted, it shows, when faced with a subsequent attack, that power of resistance, that spontaneous reappearance after apparent suppression, which is so characteristic of the fixed variations of animals. Our most carefully bred and selected domesticated animals will “throw back,” as we say, to their wild ancestors, the old adaptive characters having more capacity for survival than the new non-adaptive ones. So, in human life, you may forcibly convert the Pole by a shifting of frontiers into a German or an Austrian or a Russian, but none the less does he “throw back” to the Pole and become more definitely Polish than before the process of conversion was attempted. Similarly, not only can the Alsatian not be forcibly converted into a Prussian, but, at least to some extent, within Alsace the immigrant Prussian acquires certain of the characters of the Alsatian. In other words he shows an adaptive response to his new environment.

Further I would suggest, as already hinted, that this peculiarly human type of variation affects not only individuals but reaches its most characteristic form in nationality and in those regional groupings which exist so markedly in some national states.

Many of the characters which are popularly regarded as race characters seem to me merely examples of this direct adaptive response to environmental conditions. Take, for example, the presence of seafaring instincts in a people. Many geographers have shown, with a wealth of detail, that

wherever we find a coast line fitted for maritime enterprise, we are likely to find a population who are seafarers by instinct. Some go further and regard this as a "racial" character. Thus many speak of the English love of the sea as an Anglo-Saxon racial character. But within England, small as is the total area, there is a very sharp contrast between the coast dwellers, those with an "instinctive" knowledge and love of the sea, and the inland people to whom it is vast, mysterious, dangerous. So obvious is the distinction to close observers that keen advocates of the racial theory are constrained to take a further step and assume that the maritime population represents a distinct strain, despite the obvious physical differences between the fishers in different parts of the long coast of Great Britain and its connected islands. But if the fishing population has well-marked common characters as regards habits and modes of life and general outlook, so have the miners. Will the racialist take the further step and assume that the pitmen, though deep mining rose but yesterday, are of the same race in all the parts of Great Britain in which they occur? The suggestion is obviously absurd.

Again, that the Slavs are not seafarers and the Greeks are, is a geographical commonplace. But where the Slavs come down to a sea eminently suitable for coastal navigation, in Dalmatia, there they show all the characters of a maritime people and form the material from which the Austrian fleet is chiefly recruited. So when the Greek settles in the interior of Asia Minor he loses his supposed racial characters and becomes merged in the general population of tillers of the soil.

Take another example. Since the outbreak of the war Englishmen have come into closer contact than ever before with the men of the "new nations" across the seas. There has come to both from this closer contact a deeper sense than before of differentness—of a difference which runs through modes of life down to habits of thought. It may be said that part of this marked distinctness comes from the fact that in Canada and Australia and South Africa alike there has been a blending of races, that none has been peopled wholly from the British Isles. But the distinctions, oddly enough, are often as marked in those who are English-born and who have, in the course of relatively few years, acquired not only a new consciousness of nationality but a new outlook on life. It seems to me difficult to doubt that there is here a direct environmental effect.

All such cases—and many other examples could be given—suggest that where environmental influences are permitted to operate, there is a rapid response in the form of new regional groupings, i. e. of incipient nationalities. If it be objected that this does not meet the problem raised by Renner and others who assert that environmental diversity is in course of disappearing, I should reply that their assertion is largely based upon an illusion.

It is only true, and even there but very partially true, in regions where industrialization is far advanced. But modern large-scale industry is but

a form of "robber economy"; it is based ultimately upon a robbery of the earth's stored resources of power in fuel, of her stored fertility in virgin lands, of the labor of unorganized tropical peoples, and the like. Therefore to my mind, *in its present form*, it will prove—is now proving—as temporary as any other form of exploitation of natural reserves. Much of the stored wealth of the industrial period has already gone up in smoke and dust on the battlefield, and the world will have to begin afresh with a careful utilization—not an exploitation—of natural resources.

During the feverish development of the later industrial period the newly discovered reserves were largely squandered in wasteful living. The world to which peace comes will be in many ways a changed world, one in which patient and laborious agriculture will have to count for more. In such a world new regional groupings may be expected to rise, new forms of human diversity will originate; instead of husbanding diversities due to past conditions, man in the course of the process of reconstruction and reparation will be able to produce new ones. In that world also, let us hope, a new tolerance of differences will rise, and we shall learn something of what those differences mean for man and for civilization.